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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,021	11/24/2003	Joon-ho Cha	1793.1110	9169

21171 7590 07/20/2006

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EXAMINER
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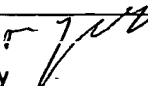
VAN ROY, TOD THOMAS

ART UNIT	PAPER NUMBER
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2828

DATE MAILED: 07/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/719,021	Applicant(s) CHA ET AL.	
	Examiner Tod T. Van Roy 	Art Unit 2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 May 2006.
- 2a) ☐ This action is **FINAL**.      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 3, 4, 6, 7, 9, 10 and 15-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3-4, 6-7, 9-10, 15-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### DETAILED ACTION

Included below is a copy of the Response to Arguments included with the previous Advisory Action.

#### *Response to Arguments*

Applicant's arguments filed 04/10/2006 have been fully considered but they are not persuasive.

The applicant attests that the combination of Patrick Jr. with Riaziat and Spangler would teach an inoperable device.

The examiner does not agree with the applicant's position. First, in the applicant's remarks, it is stated that the combination of Patrick Jr.'s "bleed resistor" with Riaziat and Spangler would make the device inoperable; however, the examiner did not rely on Patrick Jr. to teach the bleed resistor element, but instead the acutely shaped end of the bleed resistor. As stated in the previous rejection to the claims: "Patrick teaches an acutely shaped conductor which is used to facilitate ESD discharges (col.3 lines 10-15). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the laser diode ground connector of Riaziat and Spangler, used for ESD protection, with **the acute shape** taught by Patrick in order to further attract ESDs to the ground connector to protect the various circuit elements." As has been highlighted here, the inclusion of the bleed resistor was not that which was motivated, but instead, the shape of the conductor was motivated. As Patrick teaches this shape to assist in the concentration of static electricity, it is believed that proper

motivation is provided for the use of the shape in combination with the ESD protection connectors of Riazat and Spangler.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 1, 3-4, and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Riazat et al. (US 2003/138008) in view of Spangler (US 5547385) and further in view of Patrick, Jr. (US 3767971).

With respect to claim 1, Riazat teaches a laser diode (fig. 8 #814) comprising at least one active connector (fig.8 #810), a ground connector (fig.8 #808), wherein the active connector and ground connector protrude from the laser diode so as to be electrically connectable to a laser diode driving integrated circuit. Riazat does not teach

Art Unit: 2828

the ground pin to be longer than the active pin or to be acutely shaped compared to the active connector. Spangler teaches an electrical connector in which the ground pin is longer than the active pins (col.1 lines 56-64). Patrick teaches an acutely shaped conductor which is used to facilitate ESD discharges (col.3 lines 10-15). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the laser diode connectors of Riazat with the ground connector length of Spangler in order to prevent electrostatic discharges (ESDs) from harming the various circuit elements (Spangler, col.1 lines 45-50), as well as to combine the laser diode ground connector of Riazat and Spangler, used for ESD protection, with the acute shape taught by Patrick in order to further attract the ESDs to the ground connector to protect the various circuit elements..

With respect to claims 3 and 4, Riazat and Spangler teach the laser diode as outlined in the rejection to claim 1, and Riazat further teaches the active connector to comprise a first connector (fig.8 #810, laser diode) and second connector (fig.8 #824, photodiode).

With respect to claim 15, Riazat teaches a laser diode comprising an active connector (fig.8 #810), and a ground connector (fig.8 #808). Riazat does not teach the ground connector to be longer and acutely shaped as compared to the active connector. Spangler teaches an electrical connector in which the ground pin is longer than the active pins (col.1 lines 56-64). Patrick teaches an acutely shaped conductor which is used to facilitate ESD discharges (col.3 lines 10-15). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the laser diode

Art Unit: 2828

connectors of Riaziat with the ground connector length of Spangler in order to prevent electrostatic discharges (ESDs) from harming the various circuit elements (Spangler, col.1 lines 45-50), as well as, to combine the laser diode ground connector of Riaziat and Spangler, used for ESD protection, with the acute shape taught by Patrick in order to further attract the ESDs to the ground connector to protect the various circuit elements.

With respect to claims 16 and 17, Riaziat, Patrick and Spangler teach the laser diode as outlined in the rejection to claim 15, and Riaziat further teaches the active connector to comprise a first connector (fig.8 #810, laser diode) and second connector (fig.8 #824, photodiode).

Claims 6-7, 9-10 and 18-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Riaziat in view of Spangler, and further in view of Kjarsgarrrd (US 3972356) and Patrick, Jr..

With respect to claim 6, Riaziat and Spangler and Patrick, Jr. teach the laser diode as outlined in the rejection to claim 1, but do not teach the insertion of the leads into a printed circuit board (PCB). Kjarsgarrrd teaches a TO can which has its leads fixedly inserted into a circuit board (col.1 lines 24-30). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the laser diode of Riaziat and Spangler and Patrick, Jr. with the PCB connection of Kjarsgarrrd in order to allow for easy integration of the diode into larger systems, as is well known and widely

Art Unit: 2626

used in the art (Kjarsgarrrd, col.1 lines 14-15, fig.6. since the ground connector is longer, it would protrude further than the active connector).

With respect to claim 7, Riaziat, Spangler, Patrick, Jr., and Kjarsgarrrd teach the laser diode and circuit board connection, and Kjarsgarrrd additionally teaches the use of solder for connecting the pins to the board (col.1 lines 28-30). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the laser diode and circuit board connection of Riaziat, Spangler and Kjarsgarrrd with the solder connection of Kjarsgarrrd in order to make solid electrical connections of the board to the pins, as well as to provide stability to the to-can as it is fixed rigidly in place.

With respect to claims 9 and 10, Riaziat, Kjarsgarrrd, Patrick, Jr., and Spangler teach the laser diode as outlined in the rejection to claim 15, and Riaziat further teaches the active connector to comprise a first connector (fig.8 #810, laser diode) and second connector (fig.8 #824, photodiode).

With respect to claim 18, Riaziat, Spangler, Patrick, Jr., and Kjarsgarrrd teach the laser diode as outline in the rejection to claim 6, but do not teach the ground connector to be acutely shaped as compared to the active connector. Patrick teaches an acutely shaped conductor which is used to facilitate ESD discharges (col.3 lines 10-15). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the laser diode connectors of Riaziat, Spangler, and Kjarsgarrrd with the acute shape taught by Patrick in order to further attract the ESDs to the ground connector to protect the various circuit elements.

With respect to claim 19, Riazat, Spangler, Patrick and Kjarsgarrr teach the laser diode and circuit board connection of claim 18, and Kjarsgarrr additionally teaches the use of solder for connecting the pins to the board (col.1 lines 28-30). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the laser diode and circuit board connection of Riazat, Spangler, Patrick and Kjarsgarrr with the solder connection of Kjarsgarrr in order to make solid electrical connections of the board to the pins, as well as to provide stability to the to-can as it is fixed rigidly in place.

With respect to claims 20 and 21, Riazat, Kjarsgarrr, Patrick and Spangler teach the laser diode as outlined in the rejection to claim 15, and Riazat further teaches the active connector to comprise a first connector (fig.8 #810, laser diode) and second connector (fig.8 #824, photodiode).

Claims 22-25 are rejected for the same reasons as stated in the rejections to claims 18-21 above.

With respect to claim 26, Riazat, Kjarsgarrr, Patrick, and Spangler teach a method of reducing malfunctions due to ESD of a laser diode insertable into a PCB that is connectable to a laser diode driving integrated circuit as taught in the rejection of claim 18 above, wherein "cutting" the connectors can at best be considered to be a product-by-process limitation and are not given patentable weight. See MPEP 2113.

Claims 27-28 are rejected for the same reasons as stated for the rejection of claim 19 above.



Art Unit: 2828

Claims 29-30 are rejected for the same reasons as stated for the rejection of claims 20-21.

With respect to claim 31, Riazat, Kjarsgarrr, Patrick, and Spangler teach the laser diode as outlined in the rejection to claims 6 and 10, and Kjarsgarrr further teaches its use in an integrated circuit (col.2 line 68). Riazat, Kjarsgarrr, Patrick, and Spangler do not teach the ground to be longer than the photodiode connector. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the laser diode of Riazat, Kjarsgarrr, Patrick, and Spangler (including the longer ground than active connector) with a longer ground than photodiode pin in order to further prevent electrostatic discharges (ESDs) from harming the various circuit elements (same relevance to active connector, see Spangler, col.1 lines 45-50).

### ***Conclusion***

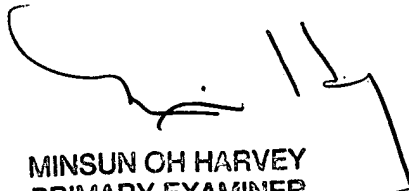
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tod T. Van Roy whose telephone number is (571)272-8447. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minsun Harvey can be reached on (571)272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2929

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TVR



MINSUN OH HARVEY  
PRIMARY EXAMINER